STATE OF CALIFORNIA

Rock Fall Barrier Testing Guidelines

Rockfall barrier testing performed by this office will follow the guidelines outlined below. These guidelines are based on previous tests and have always served as our guidelines. We do not design the product or provide any input on design. Our intent is to test a product, evaluate the product per manufacturers expectations, and report those results.

Rockfall Barrier Testing Guidelines

1. Roll a minimum of 20 rocks into the barrier starting with low energies increasing up to barrier design load to the point of failure.

2. Allow the rocks to accumulate during the rock rolling to observe the cumulative effects on the system.

3. Manufacturer/Designer is to provide drawings and specifications of the barrier prior to testing.

4. Performance will be evaluated by comparing the relationships between impact loading, maintenance, and efficiency.

a. Impact loading is the amount of energy hitting the barrier. Kinetic energy will be used to describe the impact energy.

b. Maintenance indicates repair necessary at the various impact loads. Maintenance within design loads means that the net is capable of stopping repeated rockfalls without maintenance being immediately required.

c. Efficiency represents the importance of impact location. When impact loading exceeds design loads, barrier capabilities and maintenance requirements are more dependent on the impact location. Barrier flexibility decreases outward from the center of the barrier. Efficiency is used to describe this characteristic.

d. Performance Rating; the black area in this figure represents the design load limit. Within this range, the barrier will stop impacts with little or no damage. Impacts within the shaded range will be stopped but damage could be significant. Beyond the shaded area, the barrier is not effective for design purposes.

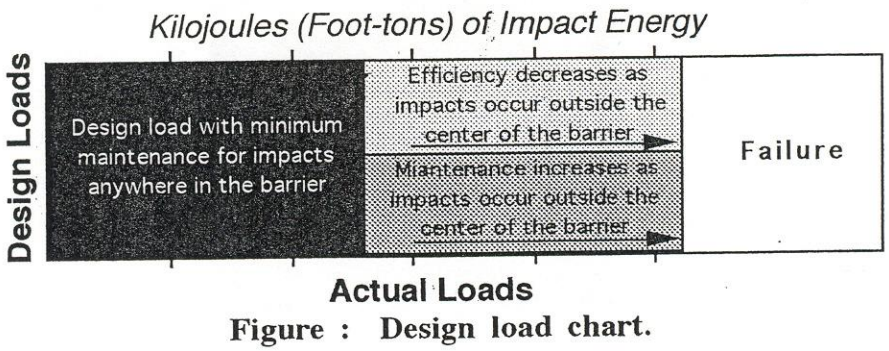

Figure : Design load chart.

5. The report will follow a similar format to previous reports covering the following:

A. Introduction
B. Conclusions
C. Recommendations
D. Rock Barriers
E. Research Objectives
F. Test Procedure
G. Designs
    1. Infrastructure
    2. Energy Absorbing Devices
    3. Posts
    4. Foundations
H. Performance and Evaluation
    1. Net Installation
    2. System Maintenance
    3. Cleaning
I. Discussion
J. References

6. We do not endorse a product. We only report the results of the test.

7. Time of completion of the report is approximately 3 months. Data collected during the testing is available to the manufacturer/designer. Analysis and results developed during the report phase are available only to Caltrans.